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Rural land use dynamics

E. Koomen, J. Groen, J. Borsboom-van Beurden & T. Kuhlman

Agriculture is still the dominant land use in the Netherlands, but it is expected that several socio-economic developments may change this in the near future. The increasing globalisation of economic relations in agriculture and the possible reduction of European price support to farmers due to the extension of the European Community are examples of such developments. These may lead to less favourable conditions for subsidised sectors as arable and dairy farming and possibly to a decline in the cultivated area. At the same time other land use functions put increasing pressure on rural land in order to accommodate housing, employment, recreation and water storage. The Land Use Scanner, an economics-based land use model, can be used to integrate understanding of socio-economic change and relevant geographical information into simulations of future land use. The model employs the equilibrium principle to balance the exogenously supplied demand for various land use functions with the supply of suitable land. The simulation of long-term spatial developments in rural areas is fundamental for policy development and assessment.

The aim of the present study was twofold:

- to identify and quantify possible future socio-economic developments in rural areas, to make them spatially explicit and to evaluate their impact on spatial, environmental and ecological quality;
- to gain insight in the functioning of specific components of the Land Use Scanner model.

After a brief conceptualisation of relevant underlying spatial processes in rural areas and an exploration of trends in rural land use change, the importance of the relevant driving forces behind these changes has been assessed. This analysis did not only look at the forces within agriculture, but also explicitly studied processes related to other types of land use that affect rural areas, such as an increasing demand for spacious living in the countryside. Subsequently, the magnitude and locational preferences of the area claims of the distinguished land use types have been estimated. The understanding of present and expected future trends will be combined into several story boards of possible futures. These serve as input into the land use model in order to simulate future land use under different socio-economic conditions. In order to get an overview of the different spatial consequences of the assumed developments, the scenarios have been chosen in such a way that the full range of potential results show up. The final part of this study dealt with the evaluation of the outcomes. What are the differences in spatial development between scenario's and what are possible impacts on ecological, environmental and spatial quality? What have we learned about the applicability of this particular land use model?